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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HONG, JOHN C	

ART UNIT	PAPER NUMBER
3726	

MAIL DATE	DELIVERY MODE
05/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/734,696	MEMMEN ET AL.	
	Examiner	Art Unit	
	JOHN C. HONG	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *16-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/8/07; 1/19/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-15 in the reply filed on 3/14/07 is acknowledged. The traversal is on the ground(s) that the examining all the claims would not present undue burden. This is not found persuasive because it presents undue burden to the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1,3-6 and 15, are rejected under 35 U.S.C. 102(e) as being anticipate by WO 03/028428 to Hass et al.**

Regarding claim 1, Hass discloses a method for restoring a part which has lost first material from a site, the first material being from a metallic substrate (320), see Page 9, lines 31-32 and Fig. 11, comprising: placing the part (20) in a deposition chamber; applying a first electric potential (65) to the part; evaporating components (25) for forming a repair material; ionizing (360) the evaporated components (Fig. 11); and modulating the first electric potential so as to draw the ionized components to the part so that buildup of the repair material at least

partially replaces the first material. See Fig. 11; Page 21, lines 1-3.

Regarding claims 3-6, these limitations are disclosed by Hass, such as heating and modulating (page 16, lines 12 "periodically altering voltage") .

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 2 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hass in view of U.S. Pre-Grant Pub. 2002/0076573 to Neal et al.**

Hass discloses the invention cited above, including restoring turbine blades. However, the reference does not disclose that the turbine blade is a Ti alloy and the repair material is Ti-based. Neal discloses a method for repairing turbine blades by an electron beam physical vapor deposition process, like Hass. Neal notes that the invention may be used with titanium (Ti) superalloy turbines blades. See [0004].

Regarding claim 2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the process of Hass wherein the turbine blade is a Ti alloy and the repair material is Ti-based, in light of the teachings of Neal, in order to efficiently repair titanium superalloy turbine blades.

Regarding claim 7-8, and 10, Neal notes the damaged areas may be machining in order to

clean the areas prior to repairing. See [0026].

Regarding claim 9, Hass does not disclose a particular titanium superalloy claimed. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have practiced the above process wherein the repair material is a claimed, in light of the teachings of Hass and Neal, in order to repair a superalloy turbine blade formed of the same claimed superalloy. The selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945).

Regarding claims 11-12, it is clearly a fortuitous matter as to where the damage site is formed, its size and depth, depending on the service requirements of a particular turbine blade. The above method clearly can be used for any given damage site. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have repaired the turbine of Hass and Neal, regardless of a particular damage site, in order to repair the site.

Regarding claims 15, both Hass and Neal disclose vacuum environments. **Neal** preferably notes a pressure of 10-5 to 10.2 Torr (0.0013 to 1.3 Pa). See [0035].

5. **Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hass and Neal in view of U.S. Pat. 6,754,955 to Carl, Jr. et al.**

Hass and Neal disclose the invention cited above. However, the references do not disclose the using a backing material to form a tip.

Carl discloses a method of repairing a turbine blade tip by building up repair material on a backing plate (26). See Figure. 4; **col. 4, lines 35-41**.

Regarding claims 13-14, it would have been obvious to one having ordinary skill in the art at the time the invention was made to performed the build up of material of Hass and Neal, in light of the teachings of Carl, in order to repair a tip of a turbine blade.

Response to Arguments

6. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection. see the new Office action.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN C. HONG whose telephone number is 571-272-4529. The examiner can normally be reached on M-F 9:00-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID BRYANT can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JOHN C HONG
Primary Examiner
Art Unit 3726

jh
May 28, 2007